

DETAILED ACTION

This application is a national stage entry of International Application No. PCT/FR04/00691, filed March 22, 2004, which claims priority to French Application No. 03/03899, filed on March 28, 2003. The copy of certified copy of the priority has been filed with the instant Application. It is noted that French Application No. 03/03899 is in French; no translation of said French application into English has been provided.

Applicant's election with traverse of species comprising a pentaerythritol group in the reply filed on April 21, 2008 is acknowledged. The traversal is on the ground(s) that the biorecognition element's exact nature is not the specific technical feature of the present invention. This is not found persuasive because substitution of different biorecognition elements could dramatically change both the structure and the function of the molecule.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-33, 36, 39-41, 45, 46, and 51 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 21, 2008.

Claims 34-35, 37-38, 42-44, 47-50, and 52-60 are examined on the merits herein.

Information Disclosure Statement

Document EP 0403366, listed on the IDS submitted September 28, 2005, was not considered because it is not in English. Only the English abstracts of documents WO 97/33919 and WO 95/19994, listed on the IDS submitted September 28, 2005 and the IDS submitted March 30, 2006, were considered.

Claim Objections

Claims 35, 38, 42, 43, and 47 are objected to because of the following informalities: the claims lack a period at the end. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 34, 35, 37, 38, 42-44, 47-50, and 52-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a

question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 34 recites the broad recitation "an alkyl group comprising from 1 to 6 carbons atoms," and the claim also recites "in particular a methyl, ethyl, propyl or butyl group," which is the narrower statement of the range/limitation. Claim 34 recites the broad recitation "an aromatic group," and the claim also recites "such as the phenyl, benzyl or naphthyl group," which is the narrower statement of the range/limitation. Claim 34 recites the broad recitation "substituents," and the claim also recites "such as methyl, ethyl, chlorine, brome, iodine, nitro, hydroxyl, methoxy or acetamido," which is the narrower statement of the range/limitation. Claim 34 recites the broad recitation "a biorecognition element," and the claim also recites "such as an amino acid derivative, a peptide, a monosaccharide, an oligosaccharide, a multiplication element," which is the narrower statement of the range/limitation. Also, claim 54 recites the broad recitation "an antineoplastic agent," and the claim also recites "in particular belonging to the taxol family," which is a narrower statement of the range/limitation.

Claim 34 recites the limitation "an aromatic group such as the phenyl, benzyl or naphthyl group, or derivatives of these groups carrying substituents on the aromatic ring." Neither the claim nor the specification provides a definition of which aromatic groups may be present or which substituents may be present on those aromatic groups.

Note that exemplification is not definition. Thus, the skilled artisan would not be aware of the metes and bounds of the claim.

Claim 34 recites the limitation "biorecognition element." This term is not explicitly defined in the specification and is described as a molecular structure which can be recognized by a biological receptor and can lead to a specific response. The specific response is also not defined. The term is indefinite because the skilled artisan would not be aware of which moieties were biorecognition elements and which were not.

Claim 34 recites the limitation "a multiplication element with several branchings comprising glucidic groups." The specification describes a "multiplication element with several branchings" as a branched carbon chain comprising a tetrasubstituted quaternary carbon. Thus, the limitation is drawn to a moiety which contains a tetrasubstituted carbon and glucidic groups. No guidance is provided as to what else may or may not be present. Thus, the skilled artisan would not be apprised of the metes and bounds of the claim.

Claims 34 and 48 recite the limitation "visualization probe or fluorescent or radioactive detection probe." Neither the claims nor the specification define which moieties fit this limitation. Note that exemplification is not definition. Thus, the skilled artisan would not be aware of the metes and bounds of the claims.

Claim 37 is drawn to a compound having the formula (I-a), but no structure is given. Thus, it is impossible to determine the metes and bounds of the claim.

Claim 47 recites the limitation "derived from tris(2-hydroxymethyl)methylamine." Neither the claims nor the specification define which derivations of tris(2-

hydroxymethyl)methylamine are intended to be within the scope of the claims. Thus, the skilled artisan would not be aware of the metes and bounds of the claims.

Claim 59 is drawn to a pharmaceutical composition comprising a compound according to claim 34, characterized in that a single dose contains a certain amount of "one of the compounds." Claim 34 is drawn to only one compound. There is insufficient antecedent basis for this limitation in the claims.

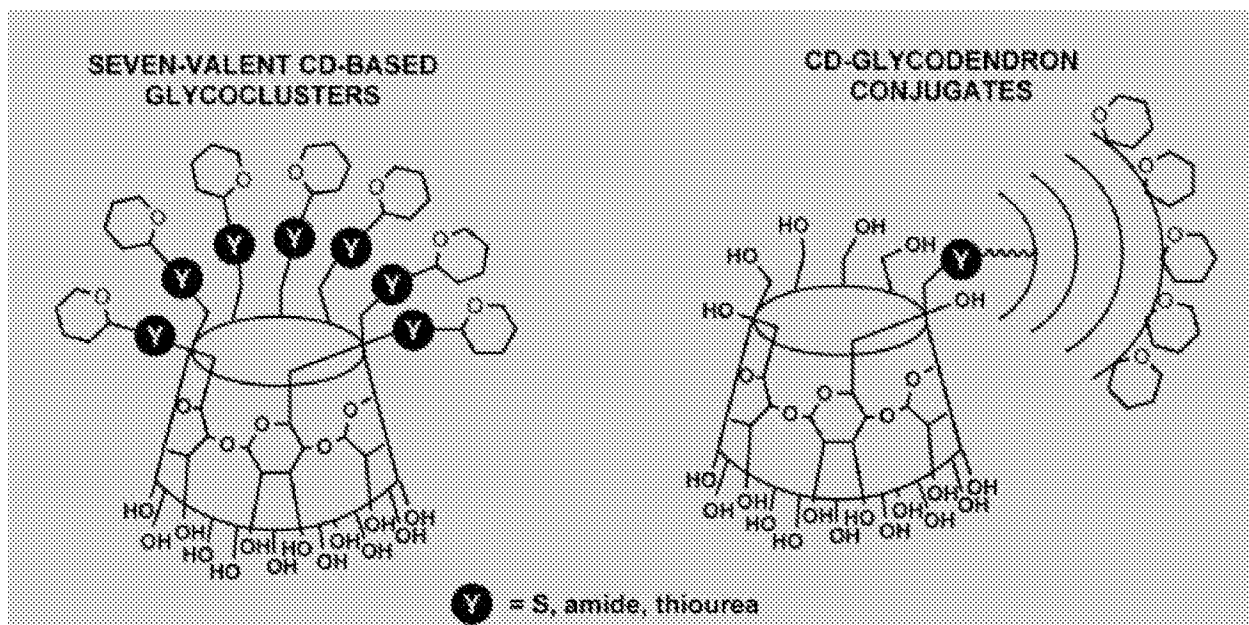
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

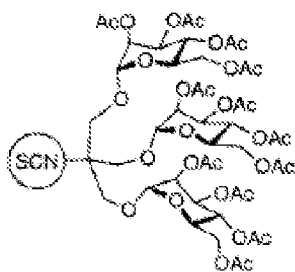
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 34, 35, 37, 38, 42-44, 47-50, and 52-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mellet et al. (Chem. Eur. J. 2002, 8, No. 9, pages 1982-1990) in view of Yasuda et al. (Chemistry Letters 2000, pages 706-707).

Mellet et al. teach multivalent cyclodextrins which are useful as molecular receptors and lectin ligands [title]. General structures are shown below [page 1982]:

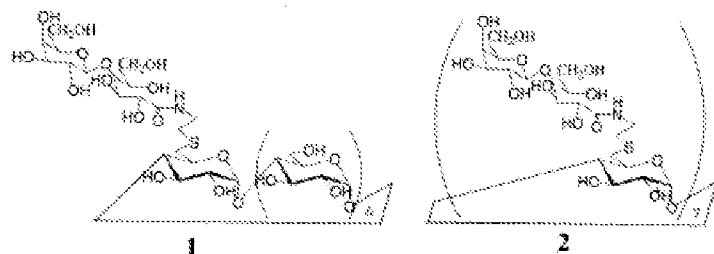


Thiourea-bridged adducts are advantageously water soluble [page 1985, second column, lines 2-3]. Multivalent cyclodextrin derivatives are bound with higher association constants than monovalent derivatives, which depends on the length and the nature of the linker [page 1987, first column, last paragraph and page 1988, second column, first paragraph]. A variety of spacer arms have been employed [page 1985, second column, fourth paragraph]. The flexible spacer taught by Yasuda, which will be discussed below, allows for induced fit of the cyclodextrin derivative around the guest molecule [page 1987, second column, second full paragraph]. Cyclodextrins carrying glycodendrons, as shown below, are useful in drug targeting [page 1988, second column].



Mellet et al. do not teach cyclodextrins linked to a glycodendron, such as the one shown above, by a bridge comprising both a S and a thiourea.

Yasuda et al. teach a cyclodextrin derivative as shown below [page 706, Figure 1]:



The linkage employed by Yasuda et al. was mentioned as an advantageous choice by Mellet et al., as was discussed above. The cyclodextrin derivative was used along with an anticancer drug [see abstract].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the claimed compounds and incorporate them into pharmaceutical compositions, including inclusion complexes. The claimed compounds are very similar to the general structure taught by Mellet et al., differing in that both a S and a thiourea are present, instead of one or the other. Mellet et al. teaches the advantage of the thiourea linker and also mentions the importance of a spacer arm of

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the proper length, such as that taught by Yasuda et al. A combination of a thiourea linker and the spacer employed by Yasuda et al. in the general structure taught by Mellet et al., including glycodendrons as taught by Mellet et al., would lead the skilled artisan to the claimed invention. Preparation of inclusion complexes and pharmaceutical compositions is well known and also considered well within the skill of the skilled artisan. Thus, the claims are obvious over Mellet et al. in view of Yasuda et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAYLA BLAND whose telephone number is (571)272-9572. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 1623

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